

Notice of Allowability

Application No.

09/686,273

Examiner

Dmitry Levitan

Applicant(s)

ARTES, JARI

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment, filed 07/22/04.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

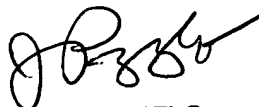
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 03/22/04.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


JOHN PEZZLO
PRIMARY EXAMINER

Art Unit: 2662

The Amendment, filed 07/22/04 has been entered. Claims 1-22 are allowed.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ronald Fish on 10/27/04.

The application has been amended as follows:

Specification, starting on page 6 line 17 through page 7 line 26, has been replaced as shown:

- Figure 5 illustrates a cluster system according to an advantageous embodiment of the invention. Figure 5 shows client computers 10 connected to a switch 200. The client computers 10, the switch 200, and form a local area network (LAN). The LAN is connected to an external network 50 through a gateway cluster consisting in this example of five gateways 30. The gateways 30 may for example function as firewall devices. The gateways 30 are connected to the external network 50 through a switch 200 and a router 40. The client computers are in figure 5 divided into three subnetworks A, B, and C. According to the embodiment shown in figure 5, the cluster system has a plurality of cluster units 30 and a switching unit 200, and said cluster units are associated with the same IP unicast address. According to the embodiment, the cluster units are configured to be members of an IP multicast group specific to the cluster system, and the cluster system comprises
- ~~means~~ one or more software programs or dedicated logic circuits 240 for observing using the IGMP protocol which ports of the switching unit are connected to the cluster units,
 - ~~means~~ one or more software programs or dedicated logic circuits 210 in the switching unit for observing the MAC destination address of a packet arriving to the switching unit and for checking if said MAC destination address is a MAC multicast address,
 - ~~means~~ one or more software programs or dedicated logic circuits 220 in the switching unit for observing the IP destination address of said packet and for

comparing said IP destination address to said IP unicast address associated with the cluster units,

- means one or more software programs or dedicated logic circuits 230 in the switching unit for forwarding of the packet to those ports whose identifiers were previously stored to said memory ~~means~~ as a response to the finding that said IP destination address and said IP unicast address are the same and said MAC destination address is a MAC multicast address.

10 In a further advantageous embodiment of the invention, ~~means~~ one or more software programs or dedicated logic circuits 240 for observing using the IGMP protocol comprise at least

- ~~means~~ one or more software programs or dedicated logic circuits 242 in the switching unit for observing IGMP multicast group reports and for checking, if a received IGMP multicast group report is addressed to said IP multicast group specific to the cluster system, and
- ~~means~~ one or more software programs or dedicated logic circuits 244 in the switching unit for storing into a memory ~~means~~ an identifier of that port via which said received IGMP multicast group report arrived as a response to finding that said report was addressed to said IP multicast group.

20 In a still further advantageous embodiment of the invention, the system further comprises ~~means~~ one or more software programs or dedicated logic circuits 260 in the switching unit for sending IGMP group membership queries.

25 In an advantageous embodiment of the invention, ~~means~~ one or more software programs or dedicated logic circuits 210, 220, 230, 240, 242, 244, 250, and 260 are realized using software programs stored in a memory element 270 of the switching unit 200 and executed by a processor 280 of the switching unit 200.

30 In another advantageous embodiment of the invention, said ~~means~~ one or more software programs or dedicated logic circuits 210, 220, 230, 240, 242, 244, 250, and 260 are realized using dedicated logic circuits implemented for example using an ASIC circuit (application specific integrated circuit). Such an implementation of the invention allows the functioning of the switching unit at extremely high speeds.

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Title of the invention has been changed from "A method of transmission of data" to -A method of transmission of data in cluster environment--.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Dmitry Levitan
Patent Examiner.
11/02/04


JOHN PEZZLO
PRIMARY EXAMINER